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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/977,297

10/16/2001

Fred Buchali

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10/05/2005

SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

CURS, NATHAN M

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/977,297	<b>Applicant(s)</b> BUCHALI, FRED	
	<b>Examiner</b> Nathan Curs	<b>Art Unit</b> 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Tremblay et al. (US Patent No. 4823360).

Regarding claim 1, Tremblay et al. disclose a receiver for receiving optically transmitted signals, the receiver comprising an optical/electrical converter (fig. 4, element 82), an electronic feedback filter (fig. 4, elements 90 and 102 and fig. 3, elements 42 and 48) and at least one eye monitor for determining a quality of a transmission link (fig. 4, element 26 and col. 5, lines 30-45), an output of the at least one eye monitor being connected to an input of the electronic feedback filter (fig. 4, element 102 and fig. 3, element Vopt), wherein the eye monitor comprises: first and second threshold-value decision elements for deciding a level of a data signal based on first and second threshold values (fig. 3, elements 40 and 44 and col. 4, lines 1-34 and col. 5, lines 1-7) which are set close to vertices of an eye opening of an eye diagram (figs. 1 and 2a-2c and col. 3, lines 20-46); first and second signal comparators for determining pseudo-errors by comparing decided signals output by the threshold-value decision elements with a signal altered by pseudo-errors (fig. 3, elements 52 and 54 and col. 4, lines 18-34); first and second integrators for integrating the pseudo-errors output by the first and second signal comparators to generate first and second internal control variables (fig. 3, elements 60, 64, 68 and 62, 66, 70 and col. 4, lines 18-34) and first and second regulators which correct the first and

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second threshold values based on comparisons between the first and second internal control variables and first and second setpoint values, respectively (fig. 3, elements Vref+ and Vref- and col. 4, lines 57-63 and col. 5, lines 1-7).

Regarding claim 2, Tremblay et al. disclose a receiver according to claim 1, where the receiver comprises two eye monitors (fig. 3, elements 40, 46, 52, 56, 60, 64, 68 and elements 44, 50, 54, 58, 62, 66, 70), outputs of which are connected to the inputs of the electronic feedback filter (fig. 4, elements 102 and 90), the two eye monitors measuring the eye opening of the signal (fig. 3, elements V+ and V-) and outputting it as a parameter signal (fig. 3, element Vopt).

Regarding claim 3, Tremblay et al. disclose a high-speed eye monitor comprising: first and second threshold-value decision elements for deciding a level of a data signal based on first and second threshold values (fig. 3, elements 40 and 44 and col. 4, lines 1-34 and col. 5, lines 1-7) which are set close to vertices of an eye opening of an eye diagram (figs. 1 and 2a-2c and col. 3, lines 20-46); first and second signal comparators for determining pseudo-errors by comparing decided signals output by the threshold-value decision elements with a signal altered by pseudo-errors (fig. 3, elements 52 and 54 and col. 4, lines 18-34); first and second integrators for integrating the pseudo-errors output by the first and second signal comparators to generate first and second internal control variables (fig. 3, elements 60, 64, 68 and 62, 66, 70 and col. 4, lines 18-34) and first and second regulators which correct the first and second threshold values based on comparisons between the first and second internal control variables and first and second setpoint values, respectively (fig. 3, elements Vref+ and Vref- and col. 4, lines 57-63 and col. 5, lines 1-7).

Regarding claim 6, Tremblay et al. disclose a method for measuring the eye opening of an eye diagram, the method comprising: determining garbled signal with two threshold values

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which correspond approximately to vertices of the eye opening (figs. 2a-2c and col. 3, lines 34-46), generating a data signal with pseudo-errors and detecting pseudo-errors through comparison with a correct signal (fig. 3, elements 52 and 54 and col. 4, lines 1-34), and adding the pseudo-errors through integration (col. 4, lines 57-63 and col. 5, lines 1-7); comparing each of the pseudo-errors with a setpoint value (fig. 3, elements 64 and 66 and col. 4, lines 57-63 and col. 5, lines 1-7); and readjusting deviating quantities and generating a differential signal of the threshold values as a measurement value (col. 5, lines 30-37).

Regarding claim 7, Tremblay et al. disclose a method for determining a garbled signal, the method comprising: determining the signal with a feedback filter which makes decisions on the basis of set threshold values and on the basis of an already determined signal (fig. 3, element Vopt, 42 and 48 and col. 3, lines 47-68); determining an eye opening of the signal with two eye monitors which determine eye edges at vertices of the signal and supplying a result to a feedback filter as a parameter (figs. 2a-2c and col. 3, lines 20-46 and col. 5, lines 63-68); and setting the threshold values of threshold value decision elements in the feedback filter, the parameter being used for setting of the threshold values so that the signal is determined in the eye optimum (col. 3, lines 47-68).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tremblay et al. (US Patent No. 4823360) in view of Bulow (US Patent No. 6016379).

Regarding claim 4, Tremblay et al. disclose the high-speed eye monitor according to claim 3, but do not disclose that the setpoint values are superimposed by small-signal components. Bulow disclose using a variation device superimposed on the Q value-based control of the equalization circuit, in order to enable the equalization control to optimally adapt to changes in signal quality over time (fig. 1, element 9 and col. 4, lines 53-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a small-signal variation signal superimposed on the equalization control signal of Tremblay et al. in order to enable the equalization control to optimally adapt to changes in signal quality over time, as suggested by Bulow.

### ***Response to Arguments***

5. Applicant's arguments filed 1 July 2005 have been fully considered but they are not persuasive.

With respect to claims 1, 3, 6 and 7, the applicant argues that in Tremblay, only one monitor is used to produce a single threshold level. However Tremblay clearly discloses two monitors producing two threshold levels (monitor 1: fig. 3, elements 40, 46, 52, 56, 60, 64, 68, producing threshold V+; and monitor two: fig. 3, elements 44, 50, 54, 58, 62, 66, 70, producing threshold V-). The applicant also argues that the eye opening is not measured; however Tremblay discloses measuring the eye opening in col. 5, lines 22-37, where "IQ" is the eye opening. The applicant also argues that Tremblay discloses that levels V+ and V- are predefined and not measured; however this assertion is not correct (see col. 3, lines 16-19 and fig. 3 and col. 4, lines 18-63).

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

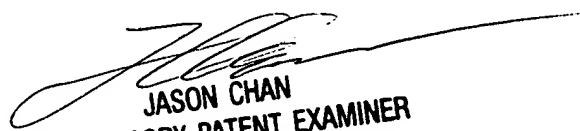
7. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pairedirect.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600